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EXAMINER	
KANG, ROBERT N	

ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/050,385	CRAGUN ET AL.	
	Examiner	Art Unit	
	Robert N. Kang	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-15 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4-15, 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Response to Arguments

1. Applicant's argument filed 6/23/2006, indicating that Graf does not teach requiring "that the copier print the image only if it contains at least one handwritten notation" has been fully considered have been considered but are moot in view of the new ground(s) of rejection.

2. Regarding claims 2 and 14, the examination of these claims was precluded due to the 112 issues; however, under no circumstances did the Examiner ever **indicate allowability,** as assumed by the applicant has assumed on page 7, paragraph 2. However, in view of the amendment (changing the two claims to independent form, incorporating elements of claims 1 and 13, as well as modification of the scope of the invention by moving claims 4, 5, 6, and 7 to depend on claim 2) the arguments are persuasive and new grounds of rejection are required. See item *** below for rejections of claims 2-7 and 14.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 12, 13, 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435).

In regards to claim 1, Graf discloses a method which scans and compresses a check or other document after isolating the dynamic elements from the preprinted check. Graf states in column 3, lines 65-68, "the term 'document' as used herein therefore includes not only paper documents such as forms, financial instruments, and the like, but more generally any type of information which may be stored or processed in the form of an electronic image." Regarding the first step of the method, "capturing a first image of a first paper document," Graf discloses in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Graf defines the dynamic portion of the document in column 4, line 9, stating, "a dynamic portion, such as added handwritten text, is a portion which may be distinct from document to document." Thus the dynamic portion qualifies as a handwritten notation. Finally, Graf discloses in column 5, lines 54-55, "the handwritten dynamic portion of the original check image 40 is identified and then isolated from the preprinted static portion." Thus Graf's patented method meets the requirements for the second step of the pending method, "detecting whether the first image contains a handwritten notation."

Graf does not expressly disclose "printing the first image only if the first image contains at least one handwritten notation."

Bloomberg discloses in claim 21 a copy machine which utilizes morphological processes to identify either handwritten annotations or machine text in a mixed format document (lines 1-10). Bloomberg's invention then "create[s] a mask image ... covering only either said region of handwritten annotation or said region of printed text," and "printing characters substantially covered by said mask image." Therefore, in the case wherein the mask image covers only the region of handwritten annotations, when there is no handwriting detected, no mask region is generated, and as such, no printing occurs. Therefore, Bloomberg teaches "printing only if the first image contains at least one handwritten notation."

Therefore, it would have been obvious at the time of invention to one of normal skill in the art to include in Graf a decision to only print if there is actually handwriting to be printed as taught by Bloomberg.

The motivation of this modification would be to only print checks or documents wherein handwriting is detected, so as to not print blank checks and/or unmarked documents.

Thus it would have been obvious to combine Graf with Bloomberg to obtain the invention as disclosed in claim 1.

Regarding claim 13, "a copying apparatus for documents ... comprising a scanner...[and] a processor configured to determine whether the image of the first

document contains a handwritten notation," Graf's claims in claim 15, "an apparatus for use in a document image processing system." A copying apparatus or photocopier falls under the category of image processing apparatuses, and thus is anticipated by the Graf patent. Additionally, Graf discloses in claim 15, line 40, "a means for receiving a first electronic image of a substantially complete document." In regards to receiving an image of the document, Graf states in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Therefore Graf's invention possesses "a scanner for capturing an image of a first document." Finally, Graf describes in claim 15, line 44, a "means for identifying a portion of the first electronic image which corresponds to a portion of the added information." The 'added information' refers to the "handwritten dynamic portion" disclosed in column 5, lines 54-55, whereas, broadly defined, the identifying means encompasses the processor claimed in claim 13, line 4. Because the processor as disclosed by the applicant and the "identifying means" as disclosed by Graf carry out the same function of identifying the presence of handwritten information, claim 13, limitation 2, "a processor configured to determine whether the image of the first document contains a handwritten notation," is unpatentable over Graf/Bloomberg.

In regards to claim 20, a "computer program configured to perform" the method as disclosed in claim 1, because the method is anticipated by Graf/Bloomberg, the software containing said method would also be unpatentable over Graf/Bloomberg.

Regarding claim 12, "wherein detecting whether the first image contains handwritten notations comprises detecting color differences in the image," Graf discloses in figures 4 and 5 a method of extracting the handwritten portions by various image transforms to determine a color spectrum range of the handwritten text, as shown in step 500. By filtering out image components outside the color spectrum range in step 502, the handwritten ink can be detected and extracted. Graf further states in column 9, lines 7-11, "since the name and address are typically printed with the same ink, their color will show up in the histogram as a prominent peak. The image data can then be thresholded to make only this color visible and thereby extract the printed text." Since extracting the handwritten text occurs simultaneously with an accurate detection of the text, and the extraction is based upon color differences in the first image, the method of claim 12 is unpatentable over the Graf/Bloomberg combination.

4. Claims 8, 9, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Gonzales (reference U).

As stated earlier in this action, Graf discloses a method which scans and compresses a check or other document after isolating the dynamic elements from the preprinted check. Graf states in column 3, lines 65-68, "the term 'document' as used herein therefore includes not only paper documents such as forms, financial instruments, and the like, but more generally any type of information which may be

stored or processed in the form of an electronic image." Regarding the first step of the method, "capturing a first image of a first paper document," Graf discloses in column 5, lines 4-8, "the check 10 may be scanned, utilized a scanner 35, in a matter well known in the art, to produce an original full check image 40 which includes the static and dynamic portions identified above." Graf defines the dynamic portion of the document in column 4, line 9, stating, "a dynamic portion, such as added handwritten text, is a portion which may be distinct from document to document." Thus the dynamic portion qualifies as a handwritten notation. Finally, Graf discloses in column 5, lines 54-55, "the handwritten dynamic portion of the original check image 40 is identified and then isolated from the preprinted static portion." Thus Graf's patented method meets the requirements for the second step of the pending method, "detecting whether the first image contains a handwritten notation." Therefore the limitations of the independent claim 1 are met.

Graf/Bloomberg does not expressly disclose a method of determining whether a document has handwritten notations by receiving two copies of the same original document after handwritten notations have or have not been added by comparing the two images.

Gonzales on page 465, paragraph 4, states "one of the simplest approaches for detecting changes between two image frames f(x, y, Ti) and f(x, y, Tj) taken at times Ti and Tj, respectively, is to compare the two images pixel by pixel. One procedure for doing this is to form a difference image. A difference image between two images take at times Ti and Tj maybe defined as

dij(x, y) = 1 if | f(x, y, Tj) – f(x, y, Ti) | > Threshold

dij(x, y) = 0 otherwise"

Graf/Bloomberg and Gonzales are combinable because they are both from the field of image processing and image transforms. Furthermore, the techniques cited in Gonzales are extremely elementary relative to the processes as disclosed by Graf/Bloomberg.

Therefore, it would have been obvious at the time of invention to one of ordinary skill in the art to integrate in Graf/Bloomberg a method of receiving a second image and comparing it to the first through subtraction to determine any changes in the images as taught by Gonzales. Claims 8 and 11 are inherently met by this modification for the following reasons: 1.) In order to have a second image for comparison, another copy of the document with or without additional markings must be received. Since Graf discloses a scanning operation to capture the first image, it follows that Graf would utilize the same scanning operation when scanning a separate physical sheet of paper, thereby meeting the requirements of claim 8. 2.) To compare an image pixel by pixel as taught by Gonzales, image data must be retained in order to perform the necessary subtraction. For image data to be maintained, the intensity values for each pixel must be stored in either a location in physical memory or within registers within a processor cache. In either case, this comprises "storing the first [or second] copy of the first image in a storage device." Thus the entire process in claim 11 is unpatentable over the Graf/Bloomberg/Gonzales combination. Therefore, the apparatus claim 18 is met as

well, since it follows that the processor carries out the instructions as recited by the method claim.

The motivation for this modification would be to reduce the possibility of incorrectly designating an image or non-OCR readable document object present in both sheets as handwritten notations.

Thus it would have been obvious at the time of invention to combine Graf/Bloomberg with Gonzales to achieve the invention disclosed in claims 8, 9, 11, and 18.

5. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Jinnai (US-PAT 5,982,502) further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

The Graf/Bloomberg/Jinnai combination, which automatically prints out a given page if a handwritten mark is detected in an image file, is thoroughly described in the above rejection and thus not restated for the dependent claims 4 and 7.

Microsoft Corporation's word processing application, Word 2002, also known as Word version 10, was released in 2001. A brief summary of the history and features of the Microsoft Word application can be found at www.wikipedia.org. As shown in reference V, Microsoft discloses a method of tracking changes to a document by "using revision marks, the equivalent of 'redlining' or 'blacklining' in the legal profession, to indicate tracked changes," as disclosed in paragraph 2. These red and black lines,

broadly defined, qualify as "location information" because they mark the specific location in a document where changes have occurred. Printing the document while under the change tracking mode also prints these red and black lines on the print media, thus "printing the location information." Furthermore, these red and black lines may be saved with the current version of the document to compare changes to a previous version, thus qualifying as "storing the location information in a memory."

Paragraph 2 of reference V shows a "blackline" in the margin of a paragraph of text where changes have been detected. It is denoted by the label "changed line." Microsoft Word, when in change tracking mode, automatically places these blacklines in the margins of paragraphs of changed text; an operation parallel with 'blacklining' in the legal industry. Therefore, this comprises "superimposing a margin mark onto the first image adjacent to the handwritten notation."

Graf/Bloomberg, Jinnai, and Microsoft Word are combinable because they all deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Bloomberg/Jinnai a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow easy and automatic location and indexing of detected handwritten notations; this method would allow the

modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf/Bloomberg/Jinnai with Microsoft Word to obtain the invention as disclosed in claim 15.

1. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

Graf discloses an apparatus which meets the requirement of independent claim 13, as earlier stated in this office action. Graf's patented apparatus does not expressly state that the "processor is configured to generate notation summary information for the document."

Paragraph 3 of the Microsoft Help document V states "when a comment is added word numbers it and records it in a separate comment pane... word tracks each reviewer's comment reference marks in a distinct color." Broadly defined, the numbering and coloring of each comment qualifies as "a notation summary" which is generated by the word processing application, which in turn uses the central processor of the host PC.

Graf and Microsoft Word are combinable because they deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow referencing and summary of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf with Microsoft Word to obtain the invention as disclosed in claim 17.

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Gonzales, further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

Examiner asserts that claim 10 is identical to claim 17 except that it depends on dependent claim 8, which requires two scanning processes for two distinct image copies of a single document. Therefore, the Graf/Bloomberg/Gonzales combination is required.

The Graf/Bloomberg/Gonzales combination as stated in the rejection for claim 8 meets the requirements of a method which performs two scans and two detections for multiple user edited copies of a single document.

The Graf/Bloomberg/Gonzales combination does not expressly state that the "processor is configured to generate notation summary information for the document."

Paragraph 3 of the Microsoft Help document V states "when a comment is added word numbers it and records it in a separate comment pane... word tracks each reviewer's comment reference marks in a distinct color." Broadly defined, the numbering and coloring of each comment qualifies as "a notation summary" which is generated by the word processing application, which in turn uses the central processor of the host PC.

Graf/Bloomberg, Gonzales, and Microsoft Word are combinable because they deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Bloomberg/Gonzales a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow referencing and summary of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine the Graf/Bloomberg/Gonzales combination with Microsoft Word to obtain the invention as disclosed in claim 10.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), in view of Jinnai (US-PAT 5,982,502) further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

Examiner asserts that claim 19 is simply a homologation of previous method and/or apparatus claims. Specifically, limitations (a) and (b) are simply a restatement of claim 10, as is the limitation after (c), "wherein the programmable processor is programmed to detect handwritten comments." Furthermore, the limitation, to "generate notation summary for the page based on the detection," is a restatement of claim 17. Similarly, the following claim "superimpose a margin mark adjacent to the handwritten comments," is a restatement of claim 15. Finally, the final limitation, "print[ing] the image of the page only if the page includes at least one handwritten comment," is a simple restatement of claim 16.

The examiner contends that the only difference between the collection of apparatus claims [10, 15, 16, 17] and claim 19 are the following limitations: 1.) The apparatus is "a photocopier" and 2.) Said photocopier comprises (c), a printer coupled to the programmable processor.

With regards to these examiner-labeled limitations, Graf in figure 1 discloses a scanner 35, coupled to an image processor 37, finally coupled to a printer 38. This functionally comprises "a photocopier," even though the technology used may have slight variations from the common photocopy machine. Thus limitation 1 is met.

Furthermore, the printer 38 is coupled to the image processor 37 in figure 1 as well. Therefore limitation 2, "a printer coupled to the programmable processor," is also met.

Further explanation of this rejection can be found by referencing the individual rejections for claims 10, 15, 16, and 17, wherein the combinations of prior art and the motivations for such combinations has been exhaustively described.

4. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Mooney (US-PAT 6,980,331).

Graf meets the requirements of claims 1 and 13, which are incorporated into claims 2 and 14 respectively.

Graf does not explicitly disclose "detecting whether the first image contains handwritten notations comprises using optical character recognition to detect typewritten characters."

Mooney discloses in column 4, lines 47-53, a fax machine wherein "preferably, the recipient's fax number and the sender's identifying information are typed using a common font, e.g., courier. However, using a suitable optical character recognizer, embedded handwritten characters and numbers can be detected, recognized, and converted to textual information in accordance with the principles of the present invention." Furthermore, the applicant indicates that this method of handwriting detection was well-known in the industry at the time of invention.

Therefore, it would have been obvious at the time of invention to one of normal skill in the art to modify Graf/Bloomberg to utilize OCR to detect handwriting as taught by Mooney.

The motivation of this modification would be to utilize an alternative method of handwriting recognition.

Thus it would have been obvious to combine Graf/Bloomberg and Mooney to obtain the invention as disclosed in claims 2 and 14.

5. Claims 4, 5, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US-PAT 5,631,984) in view of Bloomberg (US-PAT 5,570,435), further in view of Mooney (US-PAT 6,980,331), further in view of Microsoft Corporation Word version 10 (otherwise known as Word 2002).

With regards to claims 4, 5, and 6, the Graf/Bloomberg/Mooney combination does not expressly "generate location information for the handwritten notation" as disclosed by claim 4, consequently it does not "print the location information" as disclosed by claim 5, and finally the invention does not "store the location information in memory," as disclosed by claim 6.

Microsoft Corporation's word processing application, Word 2002, also known as Word version 10, was released in 2001. A brief summary of the history and features of the Microsoft Word application can be found at www.wikipedia.org. As shown in reference V, Microsoft discloses a method of tracking changes to a document by "using revision marks, the equivalent of 'redlining' or 'blacklining' in the legal profession, to

indicate tracked changes," as disclosed in paragraph 2. These red and black lines, broadly defined, qualify as "location information" because they mark the specific location in a document where changes have occurred. Printing the document while under the change tracking mode also prints these red and black lines on the print media, thus "printing the location information." Furthermore, these red and black lines may be saved with the current version of the document to compare changes to a previous version, thus qualifying as "storing the location information in a memory."

Graf/Bloomberg, Mooney, and Microsoft Word are combinable because they all deal directly with image and document processing as well as indirectly with image and document printing.

Therefore it would have been obvious at the time of invention to one of normal skill in the art to include in Graf/Bloomberg/Mooney a system of tracking document changes as taught by Microsoft Word, using the aforementioned detected handwritten notations as changes.

The motivation behind this modification would be to allow easy and automatic location and indexing of detected handwritten notations; this method would allow the modification of image files whereas the MS-Word system is only compatible with proprietary DOC or text files.

Therefore it would have been obvious to combine Graf/Bloomberg/Mooney with Microsoft Word to obtain the invention as disclosed in claims 4, 5, and 6.

Regarding claim 7, Paragraph 2 of reference V shows a "blackline" in the margin of a paragraph of text where changes have been detected. It is denoted by the label "changed line." Microsoft Word, when in change tracking mode, automatically places these blacklines in the margins of paragraphs of changed text; an operation parallel with 'blacklining' in the legal industry. Therefore, this comprises "superimposing a margin mark onto the first image adjacent to the handwritten notation." Thus, the aforementioned Graf/Bloomberg/Mooney/Microsoft combination meets the requirements of claim 7.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert N. Kang whose telephone number is 571-272-0593. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler M. Lamb can be reached on (571)272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RNK

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SUPERVISORY PATENT EXAMINER